From:	Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA)
To:	Manzanilla, Enrique
Cc:	Lansdale, Lawrence L CIV USN (USA); Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA); Herrera, Angeles; Chesnutt, John; Cope, Grant@DTSC; Seward, Terry@Waterboards; Chu, Anthony@CDPH; Praskins, Wayne; Sanchez, Yolanda; Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA)
Subject:	RE: Hunters Point Buildings Radiological Rework
Date:	Thursday, February 11, 2021 4:53:12 PM
Attachments:	11 FEB 2021 DRAFT HPNS Building Rad Release Response.docx

Enrique,

I hope all is well. The attached document includes the detailed technical information requested in your email below.

I am concerned that the latest round of questions are not going in a direction that leads to a path forward. The BPRG calculator includes assumptions that over-estimate risk for Hunters Point, specifically, that contaminated dust exists on building surfaces for 26 years after remediation is complete and radiological activities that could cause contaminated dust have ceased. We have conducted our own risk assessment of the remedial goals and concluded that the HPNS goals are protective. The CDPH scan of Parcel A includes a risk assessment that supports those conclusions. It is only when the BPRG calculator is used with the unrealistic dust assumption that the resulting risk values appear problematic.

The Navy began talking in earnest with EPA about building remedial goals in June 2019 and officially requested EPA consultation in October 2019. The EPA enlisted ACOE to assist in this evaluation. The result we have received from EPA in the 15 months of consultation is a set of suggested cleanup goals that our experts indicate are not achievable and not indicative of risk. Considering that building radiological remediation is being conducted across the country, I would like to refocus the discussion to using industry standard processes and remedial goals to perform retesting if that is what it is going to take for a path forward.

The Navy is ready to proceed with building retesting and wants to hold a meeting to discuss resolution. With the current EPA position, progress on the HPNS building evaluation continues to be delayed. While the soil the rework is ongoing into 2022, it is imperative that we being making progress on the building rework to keep on schedule. I know we can find a workable approach and I look forward to our upcoming meeting.

Best Regards,

Laura

From: Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>
Sent: Wednesday, February 03, 2021 1:01 PM

To: Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA) <laura.duchnak@navy.mil>
Cc: Lansdale, Lawrence L CIV USN (USA) <lawrence.lansdale@navy.mil>; Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA) <kimberly.ostrowski@navy.mil>; Herrera, Angeles <Herrera.Angeles@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>; Cope, Grant@DTSC <Grant.Cope@dtsc.ca.gov>; Seward, Terry@Waterboards <Terry.Seward@waterboards.ca.gov>; Chu, Anthony@CDPH <anthony.chu@cdph.ca.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Sanchez, Yolanda <Sanchez.Yolanda@epa.gov>
Subject: [Non-DoD Source] Hunters Point Buildings Radiological Rework

Hello Laura,

Thank you for the concrete scan data provided in your January 22, 2021, email and the dust swipe sampling data Derek provided to Wayne last week. You provided the data in support of the Navy's view that some of the proposed BPRG values EPA provided in August are below background levels and are not technically implementable.

After reviewing the submittals, we are unclear how the data support the Navy's view.

Many of the dust swipe sampling data are reported as zero (i.e., no radioactivity detected). Based on the Minimum Detectable Activities (MDAs) reported in the Navy submittal, we can conclude that background levels were less than the MDAs and may be as low as zero. We cannot tell if background levels are higher than the proposed BPRG values.

The 16.7 MDA reflects a 1-minute count time. I understand that the Navy could generate data with a lower MDA with no change in instrumentation by increasing the count time. For comparison, the CDPH used a 10-minute count time in their 2019 Parcel A dust sampling and achieved an MDA of 1.6 to 2.3.

The Navy used field instrumentation to analyze the dust swipes. I understand that the Navy could generate data with a lower MDA by using a fixed laboratory.

The dust swipe sampling data were collected on concrete. I understand background levels may differ in other types of building materials (e.g., sheet rock, wood, etc.).

The concrete scan data provide a measure of the total radioactivity (fixed plus removable) in concrete in a unimpacted building. I understood the Navy statement that some of EPA's proposed BPRG values were below background levels to refer to dust.

Given the continued deficiencies in supporting information provided by the Navy, before we meet with the HPNS Federal Facility Agreement (FFA) signatories, I want to confer with our experts at EPA headquarters, our fellow HPNS FFA state regulatory partners, and our colleagues at the California Department of Public Health (CDPH). **We anticipate a late February meeting with the all HPNS FFA signatories should provide us with time to coordinate.**

It is important to achieve a protective radiological remedy for buildings. Currently, the Navy's

fieldwork on the Parcel G radiological retesting for soil is scheduled through May 2022. We believe we can move this conversation forward in a timeframe that is appropriate with the scheduled soil fieldwork, and I look forward to meeting with you to advance this important conversation.

Best Regards,

Enrique Manzanilla
Director, Superfund and Emergency Management Division
US EPA Region 9 - Pacific Southwest
(415) 972 3843

From: Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA) <laura.duchnak@navy.mil>
Sent: Wednesday, January 27, 2021 3:00 PM
To: Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>
Cc: Herrera, Angeles <Herrera.Angeles@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Sanchez, Yolanda <Sanchez.Yolanda@epa.gov>; Lansdale, Lawrence L CIV USN (USA) <lawrence.lansdale@navy.mil>; Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA) <kimberly.ostrowski@navy.mil>; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>; Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA) <thomas.macchiarella@navy.mil>; Wochnick, Heather M CIV USN (US) <heather.wochnick@navy.mil>; Hellman, David H CIV USN COMNAVFACENGCOM DC (USA) <David.Hellman@navy.mil>; Gonzalez, Jennifer S CTR (USA) <jennifer.gonzalez.ctr@navy.mil>
Subject: RE: Hunters Point Buildings Radiological Rework

Enrique,

Derek sent the additional dust swipe data and information to Wayne yesterday. My assistant, Jenn, will reach out to Maria and the other FFA members to arrange our meeting. I look forward to our discussions and finding a way forward.

Thanks, Laura

From: Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA)
Sent: Friday, January 22, 2021 10:30 AM
To: 'Manzanilla, Enrique' <Manzanilla.Enrique@epa.gov>
Cc: Herrera, Angeles <Herrera.Angeles@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Sanchez, Yolanda <Sanchez.Yolanda@epa.gov>; Lansdale, Lawrence L CIV USN (USA) <lawrence.lansdale@navy.mil>; Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA) <kimberly.ostrowski@navy.mil>; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>; Macchiarella, Thomas L JR CIV NAVFAC HQ, BRAC PMO <thomas.macchiarella@navy.mil>; Wochnick, Heather M CIV NAVFAC HQ, BRAC

PMO <heather.wochnick@navy.mil>; Hellman, David H CIV NAVFAC HQ, BRAC PMO <david.hellman@navy.mil>
Subject: RE: Hunters Point Buildings Radiological Rework

Enrique,

As requested, please see the attached table that includes data from concrete scans performed at the concrete background area located in Building 400.

In conversations with your staff since receipt of your email, we clarified that EPA also wanted additional dust swipe data. Our contractor collected dust swipe samples from the same concrete area and we will forward that information by early next week, along with the minimum detectable concentration data from the samples and instrument calibration information. The minimal detectable concentrations can be compared directly to the BPRG remedial goals for removable contamination to confirm that they are not achievable.

I will coordinate a meeting with the FFA signatories the first week in February to allow your staff enough time to evaluate the data tables being sent next week. Please let me know if you need more time.

Best regards, Laura

From: Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>
Sent: Friday, January 15, 2021 12:06 PM
To: Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA) <laura.duchnak@navy.mil>
Cc: Herrera, Angeles <Herrera.Angeles@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Sanchez, Yolanda <Sanchez.Yolanda@epa.gov>; Lansdale, Lawrence L CIV USN (USA) <lawrence.lansdale@navy.mil>; Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA) <kimberly.ostrowski@navy.mil>; Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>
Subject: [Non-DoD Source] FW: Hunters Point Buildings Radiological Rework

Laura,

Thank you for your January 11, 2021, letter and your team reaching out to suggest times to move this important discussion forward.

You and your staff have stated that the BPRGs EPA provided in August are below the background range of common building materials expected in HPNS buildings. In my December letter, I asked the Navy to provide information supporting this statement. In response, you provided average and maximum values from a concrete background area at HPNS. We certainly appreciate this information. To evaluate the Navy's conclusion that EPA's BPRGs are below background, my team

needs to see the underlying data (i.e., the data the Navy used to generate the average and maximum values included in your letter, and additional data the Navy may have collected on background levels of radionuclides in other materials used in HPNS buildings). I would like my team to have the opportunity to review this information prior to a meeting, as this information could help frame our discussion and point us toward a solution to achieve a protective radiological remedy for buildings.

In my December 22, 2020, letter, I also proposed we convene with all signatories of the HPNS Federal Facility Agreement. Please confirm that our state partners will be invited when we convene.

Once you confirm that our partners have been invited to the discussion and provide a timeline for when my team will be provided the background information for buildings, we can schedule a meeting with the FFA parties. I look forward receiving this information and to the follow-up discussion.

Enrique

From: Robinson, Derek J CIV USN NAVFAC SW SAN CA (USA) <derek.j.robinson1@navy.mil>
Sent: Monday, January 11, 2021 12:32 PM
To: Manzanilla, Enrique <Manzanilla.Enrique@epa.gov>
Cc: Duchnak, Laura S CIV USN COMNAVFACENGCOM DC (USA) <laura.duchnak@navy.mil>; Hellman, David H CIV USN COMNAVFACENGCOM DC (USA) <David.Hellman@navy.mil>; Lansdale, Lawrence L CIV USN (USA) <lawrence.lansdale@navy.mil>; Ostrowski, Kimberly A CIV USN COMNAVFACENGCOM DC (USA) <kimberly.ostrowski@navy.mil>; Chu, Anthony@CDPH <anthony.chu@cdph.ca.gov>; Cope, Grant@EPA (Grant.Cope@calepa.ca.gov) <Grant.Cope@calepa.ca.gov>; Terry.Seward@waterboards.ca.gov; grant.colfax@sfdph.org; sally.oerth@sfgov.org; Macchiarella, Thomas L CIV USN COMNAVFACENGCOM DC (USA) <thomas.macchiarella@navy.mil>; Herrera, Angeles <Herrera.Angeles@epa.gov>; Chesnutt, John <Chesnutt.John@epa.gov>; Praskins, Wayne <Praskins.Wayne@epa.gov>; Fairbanks, Brianna <Fairbanks.Brianna@epa.gov>; Rongone, Marie <Rongone.Marie@epa.gov>
Subject: Hunters Point Buildings Radiological Rework

Hello Enrique,

I am submitting the attached letter on behalf of Laura Duchnak.

Best Regards,

Derek J. Robinson, PE
Environmental Program Manager
BRAC Environmental Coordinator
Navy BRAC PMO West
33000 Nixie Way; Bldg 50
San Diego CA 92147
Desk Phone: 619-524-6026

1. Many of the dust swipe sampling data are reported as zero (i.e., no radioactivity detected). Based on the Minimum Detectable Activities (MDAs) reported in the Navy submittal, we can conclude that background levels were less than the MDAs and may be as low as zero. We cannot tell if background levels are higher than the proposed BPRG values. What are the detection limits of swipe analyzing instruments?

   A. It is important to note that the swipe samples were collected from a non-contaminated concrete area that is used for determining concrete background. The dust that has accumulated on this area is not necessarily representative of concrete, but rather of dust that would accumulate in buildings at HPNS in the future. As this surface has been cleaned as part of background measurements, it is not surprising that little activity or variability was measured.

   Background counts are one factor for determining the MDA. Other factors include instrument efficiency and total counting time. To reach a lower MDA a longer background count time may be required, increasing the number of background counts.

   The minimum detectable concentrations (MDCs), which is the minimum detectable activity (MDA) per area, follow directly from the detection limit concept. The MDC is a level of radioactivity on a surface that can accurately be determined to be something other than background by an overall measurement process. MDCs calculations vary greatly based on ambient background levels, sample count times and ambient background count times.

   For example, the Parcel G Retesting Work Plan uses the Ludlum Model 3030 as a swipe counter, the same instrument that was used by CDPH at Parcel A.

   Count times required for various alpha MDCs using the Ludlum Model 3030P are as follows:

   An MDC of 17.3 DPM/100 cm^2 requires a 1 min sample and background count time
   An MDC of 3.5 DPM/100 cm^2 requires a 10 min sample and background count time
   An MDC of 1.2 DPM/100 cm^2 requires a 60 min sample and background count time

   Assumptions made are from the Ludlum specifications[1] as follows:
   -Background count rate of 0.3 CPM
   -Instrument efficiency of 32% (Ra-226)

   The required sample and background count times exponentially increase the lower the required MDC.

   There are an estimated total of 5,500 swipes required for the Parcel G buildings, and an estimated total of 23,000 swipes required for all of the buildings at Hunters Point.

   Assuming a 40 hour work week for swipe processing, factoring in collection of 1 background sample for every 24 hours, would **require nearly 13 years to complete** at the 60 minute count time.

This is technically impractical, purely from the equipment detection limitations, although it should be noted other factors such as natural background interference and an unsustainable false positive rate also need to be considered.

When measuring levels so close to zero, there will inherently be false positives caused by factors not attributable to Ra-226 contamination including: NORM in dust, instrument background fluctuations, low counting statistics, and/or equipment uncertainties. Demonstrating compliance with the proposed Ra-226 removable contamination limit of 1.2 DPM/100 cm^2 would result in an unacceptably high percentage of false positives. Statistically our goal is to achieve a 95% confidence level, which from a data standpoint, means we have confidence that the same sample would be replicated plus or minus 2 sigma from the measurement point. Contractor data from other projects at Hunters Point supports this position.

Additional MDC information may be found on *NUREG-1507 Minimum Detectable Concentrations with Typical Radiation Survey for Instruments for Various Contaminants and Field Conditions*[2]

2. The 16.7 MDA reflects a 1-minute count time. I understand that the Navy could generate data with a lower MDA with no change in instrumentation by increasing the count time. For comparison, the CDPH used a 10-minute count time in their 2019 Parcel A dust sampling and achieved an MDA of 1.6 to 2.3. What is your rationale for 1 minute?

   A. The Parcel C, Building 253/211 project specifies a 1 minute count time, or longer to achieve an MDC that could accurately detect the removable activity levels presented in the Parcel C ROD, which for alpha was 20 DPM/100cm^2. A 1 minute count time was sufficient to meet the MDC for the current release criteria. The 2019 Work Plan (which was reviewed by the regulatory agencies, including EPA) includes this rationale and approach, and was based on the current removable fraction limits. A 1 or 2 minute count time are standard industry practice to achieve MDCs at typical release criteria levels.

   We recently received information from CDPH which explains their MDA. CDPH achieved an MDA of approximately 2.3 DPM/100cm^2 with the following inputs/assumptions:

   -Background Count of 30 minutes
   -Background count rate of 0.26 CPM
   -Sample Count Time of 10 minutes
   -Instrument efficiency of 39%

   Using CDPH's assumptions, an MDC of 1.2 DPM/100cm^2 would be obtained using 35 minute sample and background count times. Background and instrument efficiencies will differ among projects, as noted with the previous assumptions using the Ludlum specifications. Even with an assumed increased instrument efficiency as high as CDPH's, the EPA proposed alpha removable fraction release criteria is still technically impracticable: Assuming a 40 hour work week for swipe processing, factoring in collection of 1 background sample for every 24 hours, would still **require nearly 6.5 years to complete** at the 35 minute count time.

Also important, the CDPH report includes the following information on the criteria used for determining the dust risk in the Parcel A homes. The Navy would also like to understand the risk evaluation that was used to derive the alpha and beta risk based values.

> *"The table also included an EPA risk value (as measured in DPM), showing the minimum alpha and beta value that must be present (on the dust wipe) in order to result in a cancer risk of one in a million (1 x 10-6). This risk value is calculated by multiplying the risk coefficients with a known alpha/beta activity, which is then used to calculate the minimum risk presented in the federal OSWER2 9285.6-20 guidance. A minimum cancer risk of 1 x 10-6 was selected in accordance with the OSWER guidance. Using the above calculation method, the lowest number alpha and beta radionuclides that must be present for which anyone in the survey unit area could be exposed with a cancer risk of 1 x 10-6 is 40 dpm for alpha and 5,208 for beta. In other words, test results of 40 dpm for alpha and/or 5,208 for beta would have been necessary to reach a cancer risk of one in a million."*

3. The Navy used field instrumentation to analyze the dust swipes. I understand that the Navy could generate data with a lower MDA by using a fixed laboratory. Why didn't you send the dust samples you took to the lab?

    A. The Parcel C, Building 253/211 Workplan did not include lab procedures. In general, the analysis in a lab is the same (similar instrumentation/analyzing process). The laboratory equipment would still require the unsustainable long count times noted above. Sending the swipes to the lab would only increase processing times due to shipping, lab capacity constraints, and limited processing times.

4. The dust swipe sampling data were collected on concrete. I understand background levels may differ in other types of building materials (e.g., sheet rock, wood, etc.).

    A. Hunters Point buildings consist of a variety of materials, such as concrete, metal, glass, wallboard, wood, and tile. There may be other miscellaneous materials in limited areas.

    Background levels do differ between material types. This is relevant for the scan/static measurements. The swipes measure whatever dust is present in the environment, and currently on the surface. Because of these, it is difficult to determine what specific material is present in the dust that is collected, which may include NORM.

5. The concrete scan data provide a measure of the total radioactivity (fixed plus removable) in concrete in an unimpacted building. I understood the Navy statement that some of EPA's proposed BPRG values were below background levels to refer to dust.

    A. Though the focus of the discussion has been on the dust swipes and alpha removable fraction release criteria, it is important to note there are still considerations of material specific and environmental background radioactivity associated with total radioactivity. The concrete data was provided for perspective of background values associated with unimpacted concrete, which range as high as 41 DPM/100 cm^2 for alpha.

References:

1. Model 3030P Alpha-Beta Sample Counter Specifications
   https://ludlums.com/products/all-products/product/model-3030p
2. NUREG-1507 Minimum Detectable Concentrations with Typical Radiation Survey for Instruments for Various Contaminants and Field Conditions
   https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1507/index.html
3. CDPH Hunters Point Naval Shipyard Parcel A Survey
   https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/RHB-Environment/Hunters-Point-Naval-Shipyard-Parcel-A-1-Survey.aspx